

WHAT IS CLAIMED IS:

1. An I.V. catheter assembly comprising: a catheter; a first distal needle in the catheter, the first distal needle being adapted for insertion into a blood vessel together with a portion of the catheter; an adapter having a self-sealing or self-closing plug, the adapter being connected to the catheter; a second proximal needle that is adapted to be coupled to the first distal needle; a needle holding means for holding the second proximal needle on a proximal side of the first distal needle; the second proximal needle being movable through the plug and into coupling engagement with the first distal needle to form coupled needles which move together so the first distal needle is inserted into a blood vessel and the coupled needles are then adapted to be withdrawn together proximally from the catheter.

2. An assembly according to claim 1, wherein the needle holding means comprises a guard tube into which the withdrawn coupled needles are moved to shield the coupled needles when the coupled needles are withdrawn, and a needle handle connected to the second proximal needle and movable along the guard tube.

3. An assembly according to claim 1, including needle point shielding means for shielding a distal point of the first distal needle when the coupled needles are in the withdrawn position.

4. An assembly according to claim 1, including a catheter hub fixed to a proximal end of the catheter and

connected to the adapter.

5. An assembly according to claim 4, wherein the catheter hub is removably connected to the adapter.

6. An assembly according to claim 1, wherein the needle holding means comprises a needle guard tube for accommodating distal and proximal movement of the second proximal needle, the guard tube being detachably joined to the adapter.

7. An assembly according to claim 1, wherein the adapter plug is made of self-sealing elastomer.

8. An assembly according to claim 1, wherein the needle holding means comprises a guard tube and a needle handle movable in distal and proximal directions in the guard tube, locking means for locking the coupled needles in a withdrawn position in the guard tube and the guard tube covering the distal end of the first distal needle in the withdrawn position for shielding the distal end of the first distal needle.

9. An assembly according to claim 8, including a lock at a proximal end of the guard tube for holding the needle handle in the storage position.